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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Daisuke Okonogi

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EXAMINER

EACHELMAYER, ALIX ELIZABETH

ART UNIT

PAPER NUMBER

1745

DATE MAILED: 07/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/721,784	Applicant(s) OKONOGI ET AL.	
	Examiner Alix Elizabeth Echelmeyer	Art Unit 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-8 is/are pending in the application.
- 4a) Of the above claim(s) 9-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3-24-04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Office Action is responsive to the amendment filed on June 1, 2006. Claim 1 has been amended. Claim 3 has been cancelled. Claims 9-18 have been withdrawn. Claims 1 and 3-8 are pending and are rejected for reasons given below.

Specification

2. The disclosure is objected to because of the following informalities. On page 2: in line 2 "cells" should be singular; in line 7, "Fig 13" should be "Fig. 13B" as Fig. 13 does not exist; in line 25 "secure" should be "secures." On page 3 in line 15 "Objects ... is..." should be "Objects ... are..." On page 6 in line 18 "provide" should be "provides." On page 11 in lines 4 "materials for suitably used" should be "materials for suitable use" or "materials suitably used." On page 12: in lines 3 "comprises" should be "comprise"; in line 5 "an optional additives" should be "optional additives" or "an optional additive"; in line 14, "chloropyrene" should be "chloropyrene." On page 13 in lines 14 "ne" should be "be." On page 25 in line 24, "Fig. 9A" should be "Fig. 9." On page 26 in line 4 the reference number "23" should be omitted since the drawing of Fig. 9 does not contain a reference number 23.

Appropriate correction is required.

Claim Objections

3. Claim 8 is objected to under 37 CFR 1.75(c) as being in improper form because it is dependent from a multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claim has not been further treated on the merits.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 7 recites the limitation "originated from the mold" in the at least one pore of the seal-separator conjugation. There is insufficient antecedent basis for this limitation in the claim.

Claim Interpretation

6. Claim 7, which was rejected for lacking antecedent basis in the claims for the limitation concerning how the pore was formed, is being interpreted to claim the communication pore of claim 5 since no other pore was found in the specification.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 5, 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Suenaga et al. (JP 2002305006).

Regarding claim 1, Suenaga et al. teach a laminated fuel cell having a polymer electrolyte membrane layer sandwiched between two separator layers, with seals contained on the separators that fit into seals on other separators of other fuel cells ([0001], Figures 5, 6, 7, 9, 12, and 13).

Regarding claim 5, Suenaga et al. teach a communication hole that is sealed on its sides by the seals attached to the separator (Figures 12 and 13).

As for claim 7, it can be seen from the drawings that the hole is in a vertical direction to the direction of the front and rear surfaces of the separator.

Regarding claim 8, Suegana et al. teach that the inner circumference of the free passage, interpreted to be the pore, is covered with an insulating member ([0038]).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suegana et al. in view of Kralick (US Pre-grant Publication 2002/0182471).

The teachings of Suegana et al. as discussed above are incorporated herein.

Suegana et al. teach a seal-separator conjugation, with a rubber seal ([0004]) but fail to teach that the seal formed on the front surface is made from a different material than the seal on the rear surface.

Kralick teaches a fuel cell stack having one gasket that is made of a material "compatible" with coolant for the coolant openings, and another gasket made of a material that is "compatible" with air for the reactant flow openings. Kralick further teaches that, since one gasket material may be more expensive than another, selection of different materials based on both properties and cost may reduce the overall costs of the fuel cell system ([0023]).

It would be desirable to use different materials for the seals of different passages based on what substance would be flowing through them in order to select the material with the best properties for the intended substance and with the most cost efficiency in order to reduce the overall costs of the system.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use different types of materials, as taught by Kralick, in the seals taught by Suegana et al. in order to select the most appropriate material for the part and to reduce the overall costs of the system.

13. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suegana et al. in view Uchida et al. (US Patent Number 6,316,139).

The teachings of Suegana et al. as discussed above are incorporated herein.

Suegana et al. teach a seal-separator conjugation having a communication pore but fail to teach that the seal portions are adhered using an insulating primer/adhesive.

Uchida et al. teach the use of an adhesive layer to attach a gasket to a separator in a polymer electrolyte fuel cell wherein the elastomer layer of the gasket is adhered using the adhesive layer (abstract). Uchida et al. also teach that the adhesive layer acts

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as an insulator (column 4 lines 1-15). Uchida et al. further teach that the adhesive layer is useful because it makes the gasket both easy to position and easy to assemble (abstract).

It would be advantageous to use an insulating adhesive layer as taught by Uchida et al. to attach the seal to the separator in the seal-separator assembly of Suegana et al. in order to make the seal both easy to position and easy to assemble.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the adhesive layer of Uchida et al. to adhere the seal to the separator of Suegana et al. because it would make the seal both easy to position and easy to assemble.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alix Elizabeth Echelmeyer whose telephone number is 571-272-1101. The examiner can normally be reached on Mon-Fri 7-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Alix Elizabeth Echelmeyer
Examiner
Art Unit 1745

aee

GREGG CANTELMO
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read "Gregg Cantelmo", with a stylized flourish at the end.